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*Pimephales notatus* in the Lower Susquehanna.—This fish is said to range from Quebec to Delaware and west in the Mississippi valley, thus embracing the above-named river basin where, however, I have not found it recorded before. A number of examples, one a breeding male, was secured by Mr. Witmer Stone and myself while at York Furnace, York Co., Pa., during the middle of May. *Alosa sapidissima*, *Anguilla chrysypa*, *Brama crysoleucas*, *Notropis bifrenatus*, *N. analostanus*, *Rhinichthys atronasmus*, *Hybopsis kentuckiensis*, *Ameiurus nebulosus*, *Fundulus diaphanus*, *Lepomis auritus*, *Eupomotis gibbosus*, *Perca flavescens*, *Boleosoma nigrum olmstedii*, *Plethodon erythronotus*, *P. glutinosus*, *Diemyctylus viridescens*, *D. miniatus*, *Desmognathus fuscus*, *Acris gryllus crepitans*, *Hyla pickeringii*, *H. versicolor*, *Rana palustris*, *R. clamata*, *R. catesbiana*, *R. pipiens*, *Natrix sipedon*, *Thamnophis sirtalis*, *Chrysemys picta*, and *Terrapene carolina* were taken, seen, or heard. With the exception of a single small *Exoglossum maxillingua* found in Otter Creek, no fishes were obtained in any of the nearby tributaries, all of which are swift, rocky, and of rapid descent. Besides the above, *Petromyzon marinus*, *Pomolobus pseudoharengus*, *Salvelinus fontinalis*, *Ameiurus catus*, *Stizostedion vitreum*, *Roccus americanus*, *Morone americanus*, and *Cryptobranchus alleganiensis* were reported to occur though we did not see any examples.

HENRY W. FOWLER

**Notes.**—*Origin of the Vascular Endothelium and of the Blood in Amphibia.*—Kati Marcinowski has attacked this vexed problem, using for his material *Siredon* and *Bufo*. His results are summarized as follows (*Jen. Zeitschr.*, vol. 34, 1906):—

The vascular endothelium arises from the mesenchyme and chiefly and possibly exclusively from the secondary mesenchyme. The primary mesenchyme which perhaps contributes, is derived from the ectoderm. No traces were seen of the origin of mesenchyme from the entoderm.

Vascular and blood formation is localized in two regions which in position correspond to the site of the dorsal and ventral mesenteries—sclerotomal and medioventral mesoderm regions. Besides the formation of endothelia from localized anlagen there is also a similar formation from diffusely appearing wandering cells and in connective tissue.

In their first appearance the results are either solid at first and at the first appearance of a lumen are closed to all other cavities or they

are open and connect with other spaces in the mesenchyme or connective tissue. The differences in method of formation are referable to locally different conditions of development and have no important morphological value.

The endothelium arises at a time when the blood corpuscles are in circulation in connection with lacunæ, the schizocœle, in the connective tissue and is to be regarded as arising phylogenetically from a lacunar system bounded by connective tissue whose physiologically most important and hence earliest differentiated portion lay in the region of the gut.

The localization of the blood and vascular forming cells in the region of the mesenteries confirms the view of Lang, founded on comparative anatomy, that the first differentiation of the intestinal blood sinus of the Cœlomata occurred in the separation of vessels in the region of the dorsal and ventral mesenteries.

The blood corpuscles are to be regarded as 'swimming mesenchyme cells' in Ziegler's sense. They arise in the medio-ventral mesoderm region.

J. S. K.

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## BOTANY

**Notes.**—The concluding fascicle (parts 5 to 9) of vol. 8 of the *Reports of the Princeton University Expeditions to Patagonia*, which is devoted to an account of the flowering plants by Professor Macloskie, was issued on February 26th. It brings the total pagination for the quarto volume up to 982 and the plates to 31; and in addition to the conclusion of the list of species contains an analysis of orders and families, a list of collectors, with bibliography, an account of the topography of the country, and a chapter on the character and origin of the Patagonian flora.

Vol. 4 of Reiche's *Flora de Chile* completes the *Compositæ* and contains correction sheets for the first four volumes.

A third "Contribution to the Flora of the Bahama Islands," by Britton, is separately issued from vol. 4 of the *Bulletin of the New York Botanical Garden*, under date of March 19.